

**Notice of Allowability**

Application No.

10/668,638

Examiner

Blane J. Jackson

Applicant(s)

SMITH ET AL.

Art Unit

2618

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the amendment filed 05 May 2006.
2. ☒ The allowed claim(s) is/are 1,3,5-16,19-30 and 32-37.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some\* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08),  
Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit  
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☒ Interview Summary (PTO-413),  
Paper No./Mail Date \_\_\_\_\_
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_

## **DETAILED ACTION**

### **EXAMINER'S AMENDMENT**

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview and clarified with a facsimile by Gregory J. Gorrie on 08 June 2006.

The application has been amended as follows:

Claim 23 as filed 05 May 2006 is deleted and replaced with the complete amended claim 23 as follows:

23. An apparatus comprising:

first, second, third and fourth input transconductance circuits to generate differential currents from differential baseband signals;

first and second current-mode transconductance-resistor-capacitor (GmRC) circuits coupled to the first and second input transconductance circuits for receiving the differential currents respectively from the first and second input transconductance circuits and for generating differential output currents; and

circuitry for combining respectively with the differential currents generated by the third and fourth input transconductance circuits with the differential output currents generated by the first and second current-mode transconductance-resistor-capacitor

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circuits to generate respectively in-phase (I) channel and quadrature-phase (Q) channel output differential voltage signals.

As to claim 24, after "circuits respectively" – are to -- is deleted and after "baseband voltage signals and" --are to -- is deleted.

As to claim 26, the following additional phrase is added to the end of the claim,  
-- Wherein the cross coupled transistors draw a differential output current that is inversely proportional to values of the first and second feedback resistors and the voltage-dependent capacitors. --.

As to claim 27, after "wherein" – a -- is deleted and – the – is inserted;  
After "current and is" – provided – is deleted and – further – is inserted;  
After "input current" – , the differential output current to be further inversely proportional to – is deleted and – divided by – is inserted.

### ***Drawings***

The drawings filed on 22 September 2003 are acceptable subject to correction of the informal legends and labels. In order to avoid abandonment of this application, correction is required in reply to the Office action. The correction will not be held in abeyance.

***Allowable Subject Matter***

Claims 1, 3, 5-16, 19-30 and 32-37 are allowed. Reference the applicant's Remarks filed 05 May 2006 for reasons for allowance.

***Conclusion***

Additional prior art made of record and not relied upon but considered pertinent to applicant's disclosure includes Ueno et al. (US 2004/0164795) that discloses a balanced transconductance amplifier and filter and Zheng (US 6,990,327) discloses a differential active wideband tunable notch filter for image rejection in Rf applications.

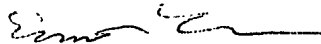
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Blane J. Jackson whose telephone number is (571) 272-7890. The examiner can normally be reached on Monday through Friday, 9:00 AM-6:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Urban can be reached on (571) 272-7899. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

BJJ

  
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